

Case Docket No.: DK-US065159

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of	:	Appeal No: _____
Ryuichiro AMANO	:	Patent Art Unit: 3746
Serial No.: 10/587,451	:	Examiner: Nathan C. Zollinger
Filed: July 27, 2006	:	<b>Confirmation No. 2263</b>
For: COMPRESSOR AND METHOD	:	
OF PLATE INSTALLATION	:	
	:	

THE ASSISTANT COMMISSIONER FOR PATENTS

Sir:

Transmitted herewith is Appellant's Appeal Brief for the above-identified application.

The items checked below are appropriate:

- ☒ Appeal Brief fee (37 CFR 41.20(b)(2)) other than small entity - \$540.00.
- ☒ The Commissioner is hereby authorized to charge payment of the following fees associated with this communication or credit any overpayment to Deposit Account No.: 50-1836.
  - ☒ The amount of \$540.00 for Brief on Appeal fee.
  - ☒ Any additional excess claim fees under 37 CFR 1.16.
  - ☒ Any additional patent application processing fees under 37 CFR 1.17.

Dated: February 1, 2011

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APPEAL BRIEF

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APPEAL BRIEF

Commissioner of Patents  
 United States Patent and Trademark Office  
 Washington, D.C. 20231

Sir:

For the appeal to the Board of Patent Appeals and Interferences from the decision dated August 17, 2010 of the Examiner rejecting claims 5-6, Applicants-Appellants submit the following brief in accordance with 37 C.F.R. §41.37.

In view of the following analysis of claims 5-6, Appellants believe that the unique arrangements of these claims are not disclosed or suggested in the references cited in the Office Action, either alone or in combination. Thus, Appellants respectfully request that the rejections of claims 5-6 be reversed, and that claims 5-6 be allowed.

If there are any questions regarding this Brief, please feel free to contact the undersigned.

*1. Real Party in Interest*

Daikin Industries, Ltd. is the owner in the above-identified patent application. Thus, the real party in interest is Daikin Industries, Ltd.

## *2. Related Appeals and Interferences*

Appellants and Appellants' legal representatives believe there are no appeals and/or interferences related to this appeal.

### *3. Status of Claims*

Claims 1 and 4-6 are presently pending in this application, with claims 1, 5 and 6 being independent claims. Claims 2-3<sup>1</sup> have been previously cancelled. Claims 1 and 4-6 are rejected in the August 17, 2010 final Office Action. None of the pending claims 1 and 4-6 are withdrawn from consideration. None of the pending claims 1 and 4-6 are objected to.

The rejected claims 5-6 are the claims on Appeal.

Claim 1 stands rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 4,717,316 to Muramatsu in view of U.S. Patent No. 3,936,205 to Speakman.

Claim 4 stands rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 4,717,316 to Muramatsu in view of U.S. Patent No. 3,936,205 to Speakman and U.S. Patent No. 5,666,015 to Uchibori et al.

Claim 5 stands rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 4,717,316 to Muramatsu in view of U.S. Patent No. 3,936,205 to Speakman, U.S. Patent No. 5,666,015 to Uchibori et al., U.S. Patent No. 3,505,923 to Neill, and JP45026515 to Tajima or JP20010515 to Takayama.

Claim 6 stands rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 4,717,316 to Muramatsu in view of U.S. Patent No. 3,936,205 to Speakman, U.S. Patent No. 3,505,923 to Neill, and JP45026515 to Tajima or JP20010515 to Takayama.

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<sup>1</sup> The August 17, 2010 Request for Reconsideration included a minor Amendment to the claims. Specifically, claims 1 and 4 were cancelled. The December 8, 2010 Advisory Action does not indicate whether this Amendment is entered or not. Thus, Applicants believe the November 17, 2010 Amendments have not been entered.

#### *4. Status of Amendments*

All amendments submitted in the above-identified application prior to the August 17, 2010 final Office Action (hereinafter "the Office Action") have been entered. The August 17, 2010 Request for Reconsideration included a minor Amendment to the claims. Specifically, claims 1 and 4 were cancelled. The December 8, 2010 Advisory Action does not indicate whether this Amendment is entered or not. Thus, Applicants believe the November 17, 2010 Amendments have not been entered. In any case, claims 1 and 4 are not on appeal, and thus, whether claims 1 and 4 are cancelled has no bearing on this Appeal.



### ***5. Summary of the Claimed Subject Matter***

The presently claimed subject matter is generally directed to a plate installation method with which a plate member (oil separation plate 2) can be reliably installed on a supporting base plate (end plate) for a compressor which enables an oil separation plate to be reliably installed on a rotor side so as not to come off and which has a function of positively separating lubrication oil and refrigerant gas. See Figures 1-2 and paragraph [0006] beginning on page 4, line 19 and ending on page 5, line 2. The plate member (oil separation plate 2) is attached by deforming (crushing) a projected part 3. The projected part (3) has a recess (5) to reduce radial and axial stresses imposed on the projection so as to disperse the stresses. Thereby, fracture of the projection can be prevented. See Figures 2-5 and paragraph [0008] beginning on page 5, line 22 and ending on page 6, line 3.

#### Independent claim 5

The method of plate installation of claim 5 includes mounting a plate member (2) on a supporting base plate (1) by fitting a projection (3) of the supporting base plate (1) into a through hole (4) of the plate member (2) to project a top end part of the projection (3) from the through hole. See Figures 2 and 6, page 9, lines 3-7 (paragraph [0019]) of the specification, and page 16, lines 22-25 (paragraph [0028]) of the specification. The projection (3) has a cone-shaped recess (5) on an upper face of the projection (3) and is made of aluminum die casting alloy. See Figures 3 and 5, page 9, lines 7-10 (paragraph [0019]) of the specification, page 15, line 25 to page 16, line 1 (paragraph [0027] and page 16, lines 6-8 (paragraph [0027]) of the specification. The cone-shaped recess (5) has an opening diameter of about 50% of an outer diameter of the projection (3) and a depth of 10 to 15 % of the outer diameter of the projection (3). See Figure 5, and page 16, lines 12-16 (paragraph [0027]) of the specification. A projected part of the projection (3) from the through hole (4) except for a

portion of the cone-shaped recess (5) on the projection is crushed by applying a downward pressing force to the projected part so as to integrate the plate member (2) with the supporting base plate (1) such that a bottom portion of the cone-shaped recess (5) exists in a state of the projection (3) being crushed. See Figures 2-5, page 9, lines 10-16 (paragraph [0019]) of the specification, and page 16, line 25 to page 17, line 9 (paragraph [0028]) of the specification.

#### Independent claim 6

The compressor of claim 6 includes a closed container (10), a compressor element section (14) housed in a lower portion of the closed container (10), and an electric motor element section (15) housed in an upper portion of the closed container (10). See Figure 1, page 5, lines 5-10 (paragraph [0007]) of the specification, and page 12, lines 4-9 (paragraph [0023]) of the specification. The electric motor element section (15) includes a rotor (25) having an upper end surface, a stator (26) disposed on an outer periphery of the rotor (25), an end plate (1) provided on the upper end surface of the rotor (25), and an oil separation plate (2) installed on the end plate (1) and forming a through hole (4). See Figure 1, page 5, lines 10-21 (paragraph [0007]) of the specification, page 13, lines 1-4 (paragraph [0024]) of the specification, and page 13, lines 12-14 ((paragraph [0025]) of the specification. The end plate (1) includes a main section (50) and a projection (3) projecting from the main section (50) and fitted in the through hole (4). The main section (50) includes a base section (9) placed on the upper end surface of the rotor (25) and an installation section (8) provided on a center portion of an upper face of the base section (9). The projection (3) projects upward from an upper face of the installation section (8). See Figures 1-4, and page 13, line 23 to page 14, line 4 (paragraph [0025]) of the specification. The oil separation plate (2) includes a central part having the through hole (4) and a peripheral part opposed to and spaced from the upper face of the base section (9) of the end plate (1). See Figures 2, 4 and 6, and page 16,

lines 3-6 (paragraph [0027]) of the specification. The projection (3) of the end plate (1) includes a projected part projected from the through hole (4) of the oil separation plate (2) and a cone-shaped recess (5) with a diameter that gradually decreases downward on an upper face of the projection (3). See Figures 2, 5 and 6, and page 16, lines 3-11 (paragraph [0027]) of the specification. The cone-shaped recess (5) has an opening diameter of about 50% of an outer diameter of the projection (3) and a depth of 10 to 15% of the outer diameter of the projection (3). See Figure 5, and page 16, lines 12-16 (paragraph [0027]) of the specification. The projection (3) is crushed to integrate the oil separation plate (2) with the end plate (1), a bottom portion of the cone-shaped recess (5) existing in a state of the projection (3) being crushed. See Figures 1-5, page 5, lines 10-21 (paragraph [0007]) of the specification, and page 18, lines 17-20 (paragraph [0029]) of the specification.

*6. Grounds of Rejection to Be Reviewed on Appeal*

The following grounds of rejection are presented for review on Appeal:

- (A) Whether claim 5 is unpatentable (obvious) over U.S. Patent No. 4,717,316 to Muramatsu in view of U.S. Patent No. 5,666,015 to Uchibori et al., U.S. Patent No. 3,505,923 to Neill, U.S. Patent No. 3,936,205 to Speakman, and JP45026515 to Tajima or JP20010515 to Takayama; and
- (B) Whether claim 6 is unpatentable (obvious) over U.S. Patent No. 4,717,316 to Muramatsu in view of U.S. Patent No. 3,936,205 to Speakman, U.S. Patent No. 3,505,923 to Neill, and JP45026515 to Tajima or JP20010515 to Takayama.

## 7. *Arguments*

Appellant respectfully submits that claims 5-6 are *not* obvious in view of the U.S. Patent No. 4,717,316 to Muramatsu in view of U.S. Patent No. 3,936,205 to Speakman, U.S. Patent No. 5,666,015 to Uchibori et al., U.S. Patent No. 3,505,923 to Neill, and JP45026515 to Tajima or JP20010515 to Takayama as asserted in the Office Action.

### General arguments concerning both claims 5-6

Regarding the alleged lack of a showing of criticality of the claimed dimensions set forth in claims 5-6, Appellant first notes that the claims do not merely recite recess “dimensions”, but rather recite *dimensional relationships* of the recess (5) relative to the outer diameter of the projection (3). Second, Appellant notes that both embodiments recite the claimed dimensional relationships in the instant application specification, and it would be clear to one of ordinary skill in the art from reading the instant application as a whole that the claimed dimensional relationships are clearly important to achieving advantages discussed in the MEANS FOR SOLVING THE PROBLEMS section of the instant application spanning pages 5-11. In particular, when paragraphs [0011], [0012], [0014], [0015], [0017], [0018], [0020] and [0021] are considered in light of the dimensional relationships of the recess (5) relative to the outer diameter of the projection set forth in the detailed description, it is clear to one of ordinary skill in the art that the claimed dimensional relationships enable the advantages discussed in the instant application to be achieved. This is further evidenced by the fact that these dimensional relationships appear in both independent claims on Appeal. Thus, Appellant believes that any assertion that the claimed dimensional relationships are somehow obvious because of the way the instant application is written is untenable. In fact, Appellant believes that the burden is on the U.S.P.T.O. to provide a rationale (based on

evidence in the prior art or general knowledge in the art) that the claimed dimensional relationships are obvious. In this case, this burden has not been met, as explained below.

The December 8, 2010 Advisory Action indicates that Appellant argued that the secondary references must be incorporated as a whole in the primary reference(s). This is not the intention of Appellant. Appellant merely believes each of the references must be interpreted as a whole when combining with other references. In other words, certain important features in the secondary reference(s), such as which end of the rivet the recess is formed in (i.e., whether the recess is formed in the deformed/crushed end or not), cannot be ignored by the Examiner, if the references are properly interpreted.

Change of size assertions of Office Action regarding both claims 5-6

The Office Action asserts that the dimensional relationships *the cone-shaped recess having an opening diameter of about 50% of an outer diameter of the projection and a depth of 10 to 15 % of the outer diameter of the projection* recited in the claims would have been an obvious matter of design choice because “A change in size is generally recognized as being within the level of ordinary skill in the art. In re Rose, 220 F.2d 459, 105 USPQ 237 (CCPA 1955).” First, Appellant notes that the above limitations do not merely set forth a “size”. Rather, these limitations set forth dimensional relationships (relational expressions) between three variables. Thus, in order to arrive at the claimed arrangement,

- (a) One first has to determine which variables to include in relational expressions;
- (b) Then one has to somehow arrive at the claimed relational expressions using these variables;
- (c) Then one has to set the variables so that the relational expressions are met.



Thus, arriving at the claimed dimensional relationships requires more than a mere *change in size*. In fact, arriving at the claimed dimensional relationships requires impermissible hindsight gleaned from Applicants' disclosure since none of the cited references disclose this unique arrangement.

Additionally, the Office Action has failed to articulate an appropriate reason (rationale) for modifying the prior art to result in the claimed relational expressions. As mentioned above, the office Action merely states that "...it would have been an obvious matter of design choice to adjust the dimensions... A change in size is generally recognized as being within the level of ordinary skill in the art. In re Rose, 220 F.2d 459, 105 USPQ 237 (CCPA 1955)." This does not form an appropriate reason (rationale) for modifying the device of the Bennett et al. patent under 35 U.S.C. §103(a) in view of *KSR Int'l Co v. Teleflex Inc.*, 550 U.S. 398, 418 (2007) and *Perfect Web Technologies Inc. v. InfoUSA Inc.*, 92 USPQ2d 1849 at 1853 (Fed. Cir. 2009), as explained below.

As the Supreme Court recently stated, "[r]ejections on obviousness cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning ***with some rational underpinning to support the legal conclusion of obviousness.***" (emphasis added.) *KSR Int'l Co v. Teleflex Inc.*, 550 U.S. 398, 418 (2007) quoting *In re Kahn*, 441 F.3d 977, 988 (Fed. Cir. 2006). Not only is no rational underpinning provided in this case, no evidence is provided that supports the alleged reason. In fact, there actually is no reason provided whatsoever in the Office Action to modify the device of the prior art to result in the claimed dimensions. In other words, the Office Action, without any evidentiary support, fails to explain any logical reasoning which would lead one of ordinary skill in the art to modify the prior art as asserted in the Office Action. Thus, it is unclear how/why one of ordinary skill in the art would modify the prior art to result in the claimed ***relational expressions***. Moreover, the Federal Circuit has clarified that an examiner may not invoke

“good common sense” to reject a patent application without some factual foundation, where “basic knowledge and common sense was not based on any evidence in the record.” *Perfect Web Technologies Inc. v. InfoUSA Inc.*, 92 USPQ2d 1849 at 1853 (Fed. Cir. 2009) quoting *In re Zurko*, 258 F.3d 1379, 1383, 1385 [59 USPQ2d 1693] (Fed. Cir. 2001). In fact, the Examiner completely fails to explain any rationale (logic) behind this aspect of the obviousness rejection whatsoever, apparently relying on an alleged lack of criticality as a substitute for an appropriate obviousness analysis. Furthermore, none of the cited references make any mention of the claimed dimensional relationships whatsoever. Thus, the prior art cannot provide any reason for modifying such dimensional relationships whatsoever. The mere fact that the prior art can be modified does **not** make the modification obvious, unless an **apparent reason** exists based on evidence in the record or scientific reasoning for one of ordinary skill in the art to make the modification. *KSR at 1741*.

Finally, the Office Action has not articulated any problem known to one of ordinary skill in the art prior to Applicants’ Specification for arriving at the claimed dimensional relationships between the variables set forth in the independent claims. Absent the articulation of such a problem, one of ordinary skill in the art would have had no apparent reason even to try to arrive at the claimed dimensional relationships set forth in the independent claims. In other words, it would be impossible for one of ordinary skill in the art to optimize something, which he/she is unaware needs optimizing. An obvious to try rationale may be proper when the possible options for solving a problem were known and finite. However, if the possible options were not either known or finite, then an obvious to try rationale cannot be used to support a conclusion of obviousness. *Rolls-Royce, PLC v. United Technologies Corp.*, 603 F.3d 1325 (Fed. Cir. 2010). Thus, the Examiner’s evidence and reasoning fail to support the conclusion of obviousness in this case. Accordingly withdrawal of rejections of independent claims 5 and 6 is respectfully requested.



### **GROUND OF REJECTION (A)-Claim 5**

The claimed cone-shaped recess of the projection (set forth in independent claim 5) allows the projected part of the projection to be deformed when crushing the projection, to reduce and disperse radial and axial stresses on the projection to thereby prevent the projection from breaking. See paragraph [0029] of the instant application.

The office Action acknowledges that Muramatsu lacks such a recess, but relies on Uchibori, Neill, Speakman, and Tajima or Takayama in combination to allegedly disclose such a cone-shaped recess. Applicants disagree that these references would be combined as indicated in the Office Action to result in the unique arrangements of the claims.

#### Regarding Neill

This reference lacks a bottom portion of the cone-shaped recess exists in a state of the projection being crushed, as required by claim 5. Thus, combining Neill with Muramatsu does not result in the arrangement of claim 5. Regarding the conical 40 wall in Figure 9 of Neill, which the Examiner asserts remains after crushing, Neill's recesses 40, 36 are not provided on a top surface of the projections. Therefore, Neill's recesses 40, 36 do not meet the claimed features that "a projection with a cone-shaped recess on an upper face of the projection", "crushing a projected part of the projection ...except for a portion of the cone-shaped recess on the projection", "the projection being crushed ..., a bottom portion of the cone-shaped recess exists/existing in a state of the projection being crushed".

Neill's arrangement requires a recess 18 on an upper surface of a shank 10 and recesses 40 and 36 on a bottom of the shank 10. Thus, in order to employ the teaching of Neill in Muramatsu, the end ring 7 and the caulking pin 8 of Muramatsu should be separate parts, instead of being a one-piece structure. However, there is no teaching anywhere in Muramatsu to form the end ring 7 and the caulking pin 8 as separate parts. In addition, if the

Neill's teaching is employed in Muramatsu, the recesses 40 and 36 would have to be provided at a lower part of the caulking pin 8 of Muramatsu. In other words, the diameter of the bottom of the pins in Neill does not change, and thus, this bottom pin structure could not be used in the upper pin part of Muramatsu. Therefore, combining the teaching of Neill, with Speakman and Muramatsu as asserted in the Office Action results in a structure that is quite different from the claimed arrangement.

#### Regarding Uchibori

Uchibori is merely relied upon to disclose an aluminum projection. Thus, if combined with Muramatsu and Neill, the arrangement of claim 5 would not result, i.e., because Uchibori lacks the conical recess as claimed. Moreover, Appellant notes that the general knowledge in the art teaches away from constructing the projection of Muramatsu/Neill of aluminum alloy as asserted by the Examiner. Note paragraphs [0017] and [0018] of the instant application, which indicate

**[0017]** According to the embodiment, although the projection is made of die casting aluminum alloy, the die casting aluminum alloy is inferior in fracture strength and ductility to forgings such as steel rivets. Therefore, the above-described fracture prevention measures is required for the crushing operation.

**[0018]** As described above, the end plate including the projection is made of the aluminum die casting alloy which is light-weighted and nonmagnetic. So, structurally this alloy is an optimum material for the end plate fixed onto the rotor. However, since the die casting aluminum alloy is inferior in ductility and fracture strength to other metals such as steel used in caulking rivets, any measures is necessary for prevention of the projection fracture at the time of the crushing (caulking) operation. Thus, effectiveness of the above-stated fracture prevention measures becomes very prominent for the projection.

The projections of Uchibori do not appear to be crushed whatsoever so that the above problems are not encountered. The disk of Uchibori appears to be retained by the member 27

instead of by deforming the projections. Thus, one of ordinary skill in the art would not attempt to construct the rivet of Muramatsu/Neill of aluminum alloy as asserted by the Examiner.

#### Regarding Speakman

The cone-shaped recess 41 of Speakman is intended to function as an identifier or a center (see col. 4, lines 19-22). The cone shaped recess 41 is formed in the *undeformed end of the* rivet. Thus, even though Speakman is combined with Muramatsu by providing the recess 41 as taught by Speakman on the projection of Muramatsu, it is impossible to obtain the function of the claimed cone-shaped recess of claims 5 and 6 because the recess of Speakman is not sized as claimed. Also, like Neill, discussed above, the recess in Speakman is formed in an end of the pin which is not expanded to retain the parts, and thus, would not be formed in the expanded upper end of the pins of Muramatsu. The expanded lower end 14 (i.e., the part equivalent to the upper end in Muramatsu) of the pin 10 in Speakman lacks a recess whatsoever. Furthermore, as explained with reference to paragraphs [0017] and [0018] of the instant application and Uchibori, one of ordinary skill in the art would not put a recess as disclosed by Speakmen in an end of an aluminum rivet or projection that is going to be deformed due to the issue of fracture, etc. discussed above.

#### Regarding Tajima

Tajima's so-called cone-shaped recess 2 is merely a screw hole for receiving a screw 9. Because the so-called cone-shaped recess 2 is a screw hole, it goes through the projection 2, which protrudes from a plate 3, deeply into the base main body 1, i.e., much deeper than the claimed recess. Therefore, Tajima does not teach or suggest providing a recess having the dimensional relationships defined in claim 5 in order to allow the projected part of the projection to be deformed when crashing the projection, to reduce and disperse radial and axial stresses on the projection to thereby prevent the projection from breaking. The recess of

Tajima would have to keep such a depth (much larger than claimed) in order to achieve the purpose thereof (so the purpose of reattaching with a screw is not destroyed), which is also the alleged reason for combining this teaching of Tajima. However, if such a depth is maintained, the features of the claims are not met. If the depth is not kept, the alleged reason of the Office Action for using this recess is destroyed. Thus, the position with respect to this reference is untenable.

#### Regarding Takayama

Takayama shows in figure 10 a part which is a seemingly cone-shaped recess. That part, however, is a result of stretching a tip of a cylindrically molded extension 16 shown in figure 1. As is apparent, the extension 16 does not define a cone-shaped recess. Thus, the claimed features that "a projection with a cone-shaped recess on an upper face of the projection", "crushing a projected part of the projection ...except for a portion of the cone-shaped recess on the projection", " a bottom portion of the cone-shaped recess exists in a state of the projection being crushed" are not met. In other words, as seen in Figures 2 and 10 of Takayama, the cone shaped recess is crushed and moved so that "crushing a projected part of the projection from the through hole except for a portion of the cone-shaped recess on the projection by applying a downward pressing force to the projected part so as to integrate the plate member with the supporting base plate such that a bottom portion of the cone-shaped recess exists in a state of the projection being crushed" of claim 5 is not accomplished in this reference.

#### Additional argument regarding Neill, Tajima and Takayama

The reason for including the recess 32 of Neill relied upon in the Office Action (see pages 5-6 of the Office Action) appears would be destroyed by modifying the shape of the recess based on these references. In other words, it is unclear how a change in size/shape of the recess of Neill would affect the force flow lines.

At least for the reasons above, combining any combination of Uchibori, Speakman, Neill, Tajima, and Takayama with Muramatsu would not result in the subject matter of claim 5. Accordingly, withdrawal of this rejection is respectfully requested.

#### **GROUND OF REJECTION (B)-Claim 6**

The claimed cone-shaped recess of the projection (set forth in independent claim 6) allows the projected part of the projection to be deformed when crushing the projection, to reduce and disperse radial and axial stresses on the projection to thereby prevent the projection from breaking. See paragraph [0029] of the instant application.

The office Action acknowledges that Muramatsu lacks such a recess, but relies on Neill, Speakman, and Tajima or Takayama in combination to allegedly disclose such a cone-shaped recess. Applicants disagree that these references would be combined as indicated in the Office Action to result in the unique arrangements of the claims.

#### **Regarding Neill**

This reference lacks a bottom portion of the cone-shaped recess exists in a state of the projection being crushed, as required by claim 6. Thus, combining Neill with Muramatsu does not result in the arrangement of claim 6. Regarding the conical 40 wall in Figure 9 of Neill, which the Examiner asserts remains after crushing, Neill's recesses 40, 36 are not provided on a top surface of the projections. Therefore, Neill's recesses 40, 36 do not meet the claimed features that "a projection with a cone-shaped recess on an upper face of the projection", "crushing a projected part of the projection ...except for a portion of the cone-shaped recess on the projection", "the projection being crushed ..., a bottom portion of the cone-shaped recess exists/existing in a state of the projection being crushed".

Neill's arrangement requires a recess 18 on an upper surface of a shank 10 and recesses 40 and 36 on a bottom of the shank 10. Thus, in order to employ the teaching of



Neill in Muramatsu, the end ring 7 and the caulking pin 8 of Muramatsu should be separate parts, instead of being a one-piece structure. However, there is no teaching anywhere in Muramatsu to form the end ring 7 and the caulking pin 8 as separate parts. In addition, if the Neill's teaching is employed in Muramatsu, the recesses 40 and 36 would have to be provided at a lower part of the caulking pin 8 of Muramatsu. In other words, the diameter of the bottom of the pins in Neill does not change, and thus, this bottom pin structure could not be used in the upper pin part of Muramatsu. Therefore, combining the teaching of Neill, with Speakman and Muramatsu as asserted in the Office Action results in a structure that is quite different from the claimed arrangement.

#### Regarding Speakman

The cone-shaped recess 41 of Speakman is intended to function as an identifier or a center (see col. 4, lines 19-22). The cone shaped recess 41 is formed in the *undeformed end of the* rivet. Thus, even though Speakman is combined with Muramatsu by providing the recess 41 as taught by Speakman on the projection of Muramatsu, it is impossible to obtain the function of the claimed cone-shaped recess of claims 5 and 6 because the recess of Speakman is not sized as claimed. Also, like Neill, discussed above, the recess in Speakman is formed in an end of the pin which is not expanded to retain the parts, and thus, would not be formed in the expanded upper end of the pins of Muramatsu. The expanded lower end 14 (i.e., the part equivalent to the upper end in Muramatsu) of the pin 10 in Speakman lacks a recess whatsoever.

#### Regarding Tajima

Tajima's so-called cone-shaped recess 2 is merely a screw hole for receiving a screw 9. Because the so-called cone-shaped recess 2 is a screw hole, it goes through the projection 2, which protrudes from a plate 3, deeply into the base main body 1, i.e., much deeper than the claimed recess. Therefore, Tajima does not teach or suggest providing a recess having the

dimensional relationships defined in claim 6 in order to allow the projected part of the projection to be deformed when crashing the projection, to reduce and disperse radial and axial stresses on the projection to thereby prevent the projection from breaking. The recess of Tajima would have to keep such a depth (much larger than claimed) in order to achieve the purpose thereof (so the purpose of reattaching with a screw is not destroyed), which is also the alleged reason for combining this teaching of Tajima. However, if such a depth is maintained, the features of the claims are not met. If the depth is not kept, the alleged reason of the Office Action for using this recess is destroyed. Thus, the position with respect to this reference is untenable.

#### Regarding Takayama

Takayama shows in figure 10 a part which is a seemingly cone-shaped recess. That part, however, is a result of stretching a tip of a cylindrically molded extension 16 shown in figure 1. As is apparent, the extension 16 does not define a cone-shaped recess. Thus, the claimed features that "a projection with a cone-shaped recess on an upper face of the projection", "the projection being crushed ..., a bottom portion of the cone-shaped recess existing in a state of the projection being crushed" are not met. In other words, as seen in Figures 2 and 10 of Takayama, the cone shaped recess is crushed and moved so that "a bottom portion of the cone-shaped recess existing in a state of the projection being crushed" of claim 6 is not accomplished in this reference.

#### Additional argument regarding Neill, Tajima and Takayama

The reason for including the recess 32 of Neill relied upon in the Office Action (see pages 5-6 of the Office Action) appears would be destroyed by modifying the shape of the recess based on these references. In other words, it is unclear how a change in size/shape of the recess of Neill would affect the force flow lines.

At least for the reasons above, combining any combination of Speakman, Neill, Tajima, and Takayama with Muramatsu would not result in the subject matter of claim 6. Accordingly, withdrawal of this rejection is respectfully requested.



## 8. *Conclusion*

In view of the above analysis of claims 5-6, Appellant believes that claims 5-6 are patentable over U.S. Patent No. 4,717,316 to Muramatsu in view of U.S. Patent No. 3,936,205 to Speakman, U.S. Patent No. 5,666,015 to Uchibori et al., U.S. Patent No. 3,505,923 to Neill, and JP45026515 to Tajima or JP20010515 to Takayama, whether taken singularly or in combination. Thus, Appellants respectfully requests that the rejections discussed above be reversed, and that claims 5-6 be allowed. If there are any questions regarding this Brief, please feel free to contact the undersigned.

Respectfully submitted,

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### *A- Claims Appendix*

5. A method of plate installation, comprising:

mounting a plate member on a supporting base plate by fitting a projection of the supporting base plate into a through hole of the plate member to project a top end part of the projection from the through hole, the supporting base plate having a projection with a cone-shaped recess on an upper face of the projection and being made of aluminum die casting alloy, the cone-shaped recess having an opening diameter of about 50% of an outer diameter of the projection and a depth of 10 to 15 % of the outer diameter of the projection; and

crushing a projected part of the projection from the through hole except for a portion of the cone-shaped recess on the projection by applying a downward pressing force to the projected part so as to integrate the plate member with the supporting base plate such that a bottom portion of the cone-shaped recess exists in a state of the projection being crushed.

6. A compressor, comprising:

a closed container;

a compressor element section housed in a lower portion of the closed container; and

an electric motor element section housed in an upper portion of the closed container

and including

a rotor having an upper end surface,

a stator disposed on an outer periphery of the rotor,

an end plate provided on the upper end surface of the rotor, and

an oil separation plate installed on the end plate and forming a through hole,

the end plate including a main section and a projection projecting from the

main section and fitted in the through hole, the main section including

a base section placed on the upper end surface of the rotor and an installation section provided on a center portion of an upper face of the base section, the projection projecting upward from an upper face of the installation section,

the oil separation plate including a central part having the through hole and a peripheral part opposed to and spaced from the upper face of the base section of the end plate,

the projection of the end plate including a projected part projected from the through hole of the oil separation plate and a cone-shaped recess with a diameter that gradually decreases downward on an upper face of the projection,

the cone-shaped recess having an opening diameter of about 50% of an outer diameter of the projection and a depth of 10 to 15% of the outer diameter of the projection, and

the projection being crushed to integrate the oil separation plate with the end plate, a bottom portion of the cone-shaped recess existing in a state of the projection being crushed.

***B- Evidence Appendix***

None - Appellants are not relying on any additional evidence in this appeal of the above-identified patent application other than the present record.

*C- Related Proceeding Appendix*

None - Since Appellants are not aware of any appeals or interferences relating to the above-identified patent application, there are no decisions rendered by a court or the Board that are required to be submitted herewith.